

UNITED STATES DISTRICT COURT
DISTRICT OF MASSACHUSETTS

LITTELFUSE, INC.,

Plaintiff,

v.

MERSEN USA NEWBURYPORT-
MA, LLC,

Defendant.

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Civil Action No. 1:17-cv-12375-IT

MEMORANDUM & ORDER

August 10, 2023

TALWANI, D.J.

I. Introduction

Plaintiff Littelfuse, Inc. (“Littelfuse”) alleges that fuses made and sold by Defendant Mersen USA Newburyport-MA, LLC (“Mersen”) infringe Littelfuse’s Patent No. 9,564,281 (“the ’281 patent”). First Amended Complaint [Doc. No. 7]. The parties have asked the court to re-construe two claim terms following remand from the Federal Circuit. See Littelfuse, Inc. v. Mersen USA Corp., 29 F.4th 1376 (Fed. Cir. 2022). Upon review of the parties’ filings and after holding a further Markman hearing, the court issues the following construction of the two disputed claim terms.

II. Background and Procedural History

The ’281 patent, titled “Fuse End Cap With Crimpable Terminal,” is directed at creating a fuse end cap with a “crimpable terminal” for providing “a secure electrical connection between a conductor and a fuse.” ’281 Patent col. 1, 8-10 [#46-2]. The “fuse end cap” purports to avoid the

need for prior methods for fuse connection, such as soldering and welding, by describing a fuse end cap that can be crimped. Id. at col. 1, 25-44.

The disputed terms at issue here appear in independent claims 1 and 10 of the '281 patent.

Claim 1 describes:

A fuse end cap comprising:
a mounting cuff defining a first cavity that receives an end of a fuse body, the end of the fuse body being electrically insulating;
a terminal defining a second cavity that receives a conductor, wherein the terminal is crimped about the conductor to retain the conductor within the second cavity;
and **a fastening stem that extends from the mounting cuff and into the second cavity of the terminal that receives the conductor.**

Id. at col. 7, 30-41 (emphasis and underlying of disputed terms added).

Claim 10 describes:

A fuse assembly comprising:
a first fuse end cap having a mounting cuff defining a first cavity and a terminal defining a second cavity;
a fastening stem that extends from the mounting cuff of the first fuse end cap and into the second cavity of the terminal;
a second fuse end cap having a mounting cuff defining a first cavity and a terminal defining a second cavity, and **a fastening stem that extends from the mounting cuff of the second fuse end cap and into the second cavity of the terminal;**
a fuse having a fuse body with a first end mounted within the first cavity of the first fuse end cap and a second end mounted within the first cavity of the second fuse end cap, wherein the first end of the fuse body and the second end of the fuse body are electrically insulating;
a first conductor . . . and
a second conductor

Id. at col. 8, 1-27 (emphasis of disputed term added).

On March 6, 2020, this court issued a Memorandum & Order [Doc. No. 67] on claim construction. The court construed “fastening stem” to mean “stem that attaches or joins other components” and construed “a fastening stem that extends from the mounting cuff and into the second cavity of the terminal that receives the conductor” as “a stem that extends from the

mounting cuff and into the second cavity of the terminal that receives the conductor, and attaches the mounting cuff to the terminal.” Id. at 19.¹

After the court denied Littelfuse’s Motion for Reconsideration [Doc. No. 75], see Memorandum and Order [Doc. No. 78], Littelfuse stipulated to no infringement based on the court’s claim construction [Doc. No. 85] and appealed to the Federal Circuit.

On April 4, 2022, the Federal Circuit vacated the judgment and the court’s order as to the construction of two terms: “fastening stem” and “fastening stem that extends from the mounting cuff and into the second cavity of the terminal that receives the conductor.” Littelfuse, 29 F.4th at 1382. The Federal Circuit remanded the case “for the district court to adopt a new construction of the ‘fastening stem’ limitations that allows for the independent claims to cover both single-piece and multi-piece embodiments.” Id. at 1381.

The parties filed new claim construction briefs [Docs. No. 138, 139, 140, 141] and the court held a Markman hearing on the two disputed terms.

III. Legal Framework

“Proper claim construction . . . demands interpretation of the entire claim in context, not a single element in isolation.” Hockerson-Halberstadt, Inc. v. Converse, Inc., 183 F.3d 1369, 1374 (Fed. Cir. 1999). The construction of claim terms, “including terms of art,” is a question of law, “exclusively within the province of the court.” Markman v. Westview Instruments, Inc., 517 U.S. 370, 372 (1996) (“Markman II”). In construing claim terms, courts generally give the words of a

¹ The court also construed “fuse end cap” to mean a “conductive cap that covers the end of a fuse.” It also construed “a mounting cuff defining a first cavity that receives an end of a fuse body, the end of the fuse body being electrically insulating” to mean “a cuff with a cavity in which the insulating end of a fuse body is mounted securely, such as by friction, adhesives, or mechanical fasteners.” Mem. & Order 19-20 [Doc. No. 67]. The parties do not here dispute the construction of either of these terms.

claim their “ordinary and customary meaning.” Phillips v. AWH Corp., 415 F.3d 1303, 1312 (Fed. Cir. 2005) (en banc). “[T]he ordinary and customary meaning of a claim term is the meaning that the term would have to a person of ordinary skill in the art in question at the time of . . . the effective filing date of the patent application.” Id. at 1313. To identify how a person of ordinary skill “in the art in question at the time” would understand the terms, courts look to “sources available to the public” including “words of the claims themselves, the remainder of the specification, the prosecution history, and extrinsic evidence concerning relevant scientific principles, the meaning of technical terms, and the state of the art.” Innova/Pure Water, Inc. v. Safari Water Filtration Sys., Inc., 381 F.3d 1111, 1116 (Fed. Cir. 2004).

A. The Language of the Claims

Because “the claims of a patent define the invention to which the patentee is entitled the right to exclude,” the claim construction analysis begins with the claims themselves. Phillips v. AWH Corp., 415 F.3d at 1312 (quoting Innova, 381 F.3d at 1115). “[T]he context in which a term is used in the asserted claim can be highly instructive.” Id. at 1314; see id. (“This court’s cases provide numerous . . . examples in which the use of a term within the claim provides a firm basis for construing the term”). For example, “[b]ecause claim terms are normally used consistently throughout the patent, the usage of a term in one claim can often illuminate the meaning of the same term in other claims.” Id. Additionally, “the presence of a dependent claim that adds a particular limitation gives rise to a presumption that the limitation in question is not present in the independent claim.” Id. at 1315.

B. The Specification

The claims “do not stand alone” but “are part of a fully integrated written instrument consisting principally of a specification.” Id. at 1315 (internal citation omitted). “For that reason,

claims ‘must be read in view of the specification, of which they are a part.’” Id. (quoting Markman v. Westview Instruments, Inc., 52 F.3d 967, 979 (Fed. Cir. 1995) (“Markman I”)).

“[T]he specification ‘is always highly relevant to the claim construction analysis. Usually, it is dispositive; it is the single best guide to the meaning of a disputed term.’” Id. (quoting Vitronics Corp. v. Conceptronic, Inc., 90 F.3d 1576, 1582 (Fed. Cir. 1996)). “[T]he specification may reveal a special definition given to a claim term by the patentee that differs from the meaning it would otherwise possess. In such cases, the inventor’s lexicography governs.” Id. at 1316; see CCS Fitness, Inc. v. Brunswick Corp., 288 F.3d 1359, 1366 (Fed. Cir. 2002) (stating that an inventor may “act[] as his own lexicographer” by “clearly set[ting] forth a definition of the disputed claim term in . . . the specification”). “In other cases, the specification may reveal an intentional disclaimer, or disavowal, of claim scope by the inventor.” Phillips, 415 F.3d at 1316. Nevertheless, the court must be careful to “us[e] the specification [only] to interpret the meaning of a claim” and not to “import[] limitations from the specification into the claim.” Id. at 1323; see id. (“[A]lthough the specification often describes very specific embodiments of the invention, we have repeatedly warned against confining the claims to those embodiments”). Although this distinction “can be a difficult one to apply in practice[,] . . . the line between construing terms and importing limitations can be discerned with reasonable certainty and predictability if the court’s focus remains on understanding how a person of ordinary skill in the art would understand the claim terms.” Id.

C. The Patent Prosecution History

Courts should also consider the patent’s prosecution history if it is in evidence. Id. at 1317. Prosecution history comprises the record of the proceedings before the United States Patent and Trademark Office (“PTO”), both pre- and post-issuance proceedings, and prior art cited during the

examination of the patent. Id.; see Aylus Networks, Inc. v. Apple Inc., 856 F.3d 1353, 1360 (Fed. Cir. 2017) (“[e]xtending the prosecution disclaimer doctrine to [inter partes review] proceedings will ensure that claims are not argued one way in order to maintain their patentability and in a different way against accused infringers”). “Like the specification, the prosecution history provides evidence of how the PTO and the inventor understood the patent.” Phillips, 415 F.3d at 1317. The prosecution history can also provide evidence as to “whether the inventor limited the invention in the course of prosecution, making the claim scope narrower than it would otherwise be.” Id. “Yet because the prosecution history represents an ongoing negotiation between the PTO and the applicant, rather than the final product of that negotiation, it often lacks the clarity of the specification and thus is less useful for claim construction purposes.” Id. As a result, courts must “not rely on the prosecution history to construe the meaning of the claim to be narrower than it would otherwise be unless a patentee limited or surrendered claim scope through a clear and unmistakable disavowal.” 3M Innovative Props. Co. v. Tredegar Corp., 725 F.3d 1315, 1322 (Fed. Cir. 2013); see Aylus Networks, 856 F.3d at 1360 (“when the patentee unequivocally and unambiguously disavows a certain meaning to obtain a patent, the doctrine of prosecution history disclaimer narrows the meaning of the claim consistent with the scope of the claim surrendered”) (quoting Biogen Idec., Inc. v. GlaxoSmithKline LLC, 713 F.3d 1090, 1095 (Fed. Cir. 2017)).

D. Extrinsic Evidence

Finally, in construing patent terms, courts may consider extrinsic evidence, which “consists of all evidence external to the patent and prosecution history, including expert and inventor testimony, dictionaries, and learned treatises.” Phillips, 415 F.3d at 1317 (quoting Markman I, 52 F.3d at 980). “[W]hile extrinsic evidence can shed useful light on the relevant art, . . . it is less significant than the intrinsic record in determining the legally operative meaning of

claim language.” *Id.* (internal quotation marks omitted). This is because extrinsic evidence suffers from several defects, including its independence from the patent, potential bias, and varying relevance, and is therefore “unlikely to result in a reliable interpretation of patent claim scope unless considered in the context of the intrinsic evidence.” *Id.* at 1318-19.

IV. Analysis of Disputed Terms

The crux of the parties’ dispute is how to adjust the construction of “fastening stem” and “fastening stem that extends from the mounting cuff of the second fuse end cap into the second cavity of the terminal that receives the conductor” to comport with the Federal Circuit’s conclusion that claims 1-10 encompass both single- and multi-piece apparatuses.

A. *“Fastening stem”*

Previously, this court construed “fastening stem” as “a stem that attaches or joins other components.” Mem. & Order 19 [Doc. No. 67]. Mersen proposes that the court make no change to this construction. Defendant Mersen USA EP Corp.’s Opening Claim Construction Brief (“Mersen Brief”) 4 [Doc. No. 138]. Mersen contends that the Federal Circuit affirmed the court’s construction of “fastening stem” in holding that “[t]he district court reasonably found that the plain language of the claims suggests that the ‘fastening stem’ is a stem that ‘attaches or joins.’” *Id.* at 1 (citing *Littelfuse*, 29 F.4th at 1381). According to Mersen, because the court’s construction of “fastening stem” gave meaning to the words “fastening” and “stem” without specifying that it is part of a single- or multi-piece construction, the construction remains correct. *Id.* at 6. Mersen argues further that amending the construction to remove “attaches,” as Littelfuse requests, would “improperly . . . amalgamate the ‘fastening stem’ into one or both of the terminal and the mounting cuff and [] render the ‘fastening’ function superfluous.” *Id.* at 10.

Littelfuse argues that “fastening stem” should be reconstrued to mean “a stem that joins

other components,” reading “join” “in a manner analogous to the way an intersection joins two roads.” Revised Claim Construction Brief for Plaintiff Littelfuse, Inc. (“Littelfuse Brief”) 2-3 [Doc. No. 139]. Littelfuse contends that the Federal Circuit’s opinion “expressly instructed” the court to revise its construction of “fastening stem,” and that “keeping the very same construction that has been vacated” would be “inadvisable.” Id. at 2. Littelfuse highlights the Federal Circuit’s observation that “[b]ecause claims 1 and 10 are not limited to a multi-piece apparatus, the fastening stem is not required to attach the mounting cuff to the terminal, and to that extent the district court’s construction was incorrect.” Id. (quoting Littelfuse, 29 F.4th at 1382). Accordingly, Littelfuse proposes that the word “attach” be removed from the prior construction. Id. at 3.

Although the Federal Circuit directed the court to construe “fastening stem” again, it did not suggest that the court need reach a different conclusion. Instead, the Federal Circuit directed that “the court’s constructions should continue to give meaning to the terms ‘fastening’ and ‘stem’ in the context of the invention and the ordinary meaning of those terms.” Littelfuse, 29 F.4th at 1382. The Federal Circuit elaborated:

[I]t is important to note that the district court was correct in seeking to give meaning to the term “fastening stem” by looking to the meaning of the words “fastening” and “stem” as used in the patent. The district court construed the term “fastening stem” to mean a “stem that attaches or joins other components.” On its face, that construction could plausibly cover a fastening stem that is present in a single-piece apparatus. As previously noted, one can envision a protrusion from the mounting cuff into the terminal cavity, even in a single-piece embodiment. To fall within the scope of the claims, however, that feature must constitute a “stem” and must perform a “fastening” function of some sort. The district court reasonably found that the plain language of the claims suggests that the “fastening stem” is a stem that “attaches or joins.”

Id. at 1381. (internal citations omitted).

The court finds that the construction of “fastening stem” as a stem that “attaches or joins”

is not inconsistent with a single-piece embodiment of the fuse end cap and that it is not undermined by the Federal Circuit’s opinion. Moreover, Littelfuse’s construction would write the word “fastening” out of the claim, and ignores the Federal Circuit’s direction that the feature must perform a “fastening” function of some sort.” Accordingly, the court again construes “fastening stem” as “a stem that attaches or joins other components.”

B. “Fastening stem that extends from the mounting cuff and into the second cavity of the terminal that receives the conductor”

Previously, this court construed “fastening stem that extends from the mounting cuff and into the second cavity of the terminal that receives the conductor” as “a stem that extends from the mounting cuff and into the second cavity of the terminal that receives the conductor, and attaches the mounting cuff to the terminal.” Mem. & Order 16 [Doc. No. 67]. The Federal Circuit found:

Because claims 1 and 10 are not limited to a multi-piece apparatus, the fastening stem is not required to attach the mounting cuff to the terminal, and to that extent the district court’s construction was incorrect. However, the remainder of the court’s construction is consistent with the language of both the claims and the written description of the invention.

Littelfuse, 29 F.4th at 1382.

Mersen argues that “fastening stem that extends from the mounting cuff and into the second cavity of the terminal that receives the conductor” should be reconstrued as “a stem that extends from the mounting cuff and into the second cavity of the terminal that receives the conductor, and attaches other components.” Mersen Brief 2 [Doc. No. 138]. It reads the Federal Circuit to have concluded that this court’s prior construction “was largely correct, except that the attachment should not be limited to an attachment between the terminal and the mounting cuff.” Id. at 6.

Littelfuse counters that the longer phrase should be construed as “a stem that extends

from the mounting cuff and into the second cavity of the terminal that receives the conductor.”

Littelfuse Brief 4 [Doc. No. 139]. It argues that Mersen’s construction simply substitutes

“attaches other components” for “attaches the mounting cuff to the terminal,” a construction that the Federal Circuit has already rejected. *Id.* at 4. Littelfuse contends that “the Federal Circuit was indicating that the fastening stem did not have to *attach* anything to anything else.

Attachment, per se, is not a feature of the claimed invention.” *Id.* Littelfuse’s proposed construction removes any language expressly requiring attachment.

i. *Language of the Claims*

Claim 1 describes an apparatus, the “fuse end cap,” with three features: a mounting cuff that receives an end of a fuse body, a terminal that receives a conductor, and a fastening stem that extends from the mounting cuff into the terminal. Dependent Claims 8 and 9 claim the fuse end cap of claim 1, where the mounting cuff and terminal are machined or stamped, respectively, from a single, contiguous piece of conductive material. Claim 10 claims a “fuse assembly,” with two fuse end caps that each have two cavities, one defined by a mounting cuff and the other defined by a terminal crimped around a conductor.

The court has construed “fastening stem” as “a stem that attaches or joins other components.” Since the mounting cuff and terminal can be a single apparatus, and the fastening stem must attach or join components, the claim language supports construing the disputed term “fastening stem that extends from the mounting cuff and into the second cavity of the terminal that receives the conductor” as “a stem that extends from the mounting cuff and into the second cavity of the terminal that receives the conductor, and attaches or joins the mounting cuff to the terminal or the conductor.”

ii. *Specifications*

The specification describes three embodiments of the fuse end cap. Two of the three embodiments, the machined end cap and the stamped end cap, may be manufactured from a “single piece of any suitable electrically conductive material.” Littelfuse, 29 F.4th at 1377 (citing ’281 Patent at col. 5, ll. 16–26, ll. 42–48). The third embodiment, the assembled end cap, is formed “from two separate pieces of any suitable, electrically conductive material.” Id. (citing ’281 Patent at col. 6, ll. 4–6).

The specification refers to a “fastening stem” only with respect to the assembled end cap embodiment. Id. at 1381 (citing ’281 Patent, col. 6, ll. 1–21). The Federal Circuit noted, however, that “nothing in the specification states that a fastening stem cannot be present in a single-piece apparatus.” Id. Instead, the specification “describes the fastening stem as ‘projecting from a side of the mounting cuff 460 opposite the cavity 425.’” Id. (quoting ’281 Patent, col. 6, ll. 1–3). The Federal Circuit found that “one can envision a stem that projects from the side of the mounting cuff even in an embodiment in which the fuse end cap is formed by a single piece of material.” Id.

The specifications also describe how the fuse end cap serves to make an electrical connection between the conductors. See ’281 Patent col. 3, 8–10 (describing a fuse assembly with “a pair of electrically conductive end caps . . . that electrically couple the wires . . . to the fuse”). The specifications thus support construing the term to require that the fastening stem attach or join the mounting cuff to the terminal or to the conductor.

iii. *Patent Prosecution History*

By rejoining dependent claims 8, 9, 19, and 20 with independent claims 1 and 10, the claim examiner observed that the dependent claims “require all the limitations of the . . .

allowable claims.” Littelfuse, 29 F.4th at 1379. Accordingly, any construction of “fastening stem” and “fastening stem that extends from the mounting cuff and into the second cavity of the terminal that receives the conductor” must allow for both single- and multi-piece constructions so long as the invention is a fuse end cap that comprises a mounting cuff, a terminal, and a fastening stem. Id. at 1380-81.

iv. *Extrinsic Evidence*

Finally, the court’s constructions of “fastening stem” and “fastening stem that extends from the mounting cuff and into the second cavity of the terminal that receives the conductor” remain consistent with the extrinsic evidence proffered by the parties, namely dictionary definitions of “fasten” as “to attach . . .; to make fast and secure; to fix firmly or securely; and to secure against opening.” See Mersen Brief 17 [Doc. No. 138].

v. *Conclusion*

After reconsidering the plain language, specifications, prosecution history, and extrinsic evidence, the court construes “a fastening stem that extends from the mounting cuff and into the second cavity of the terminal that receives the conductor” as “a stem that extends from the mounting cuff and into the second cavity of the terminal that receives the conductor and attaches or joins the mounting cuff to the terminal or to the conductor.”

V. Conclusion

In sum, the Court construes the disputed terms in Claims 1 and 10 as follows:

- (1) **“fastening stem”** is construed as “a stem that attaches or joins other components.”
- (2) **“a fastening stem that extends from the mounting cuff and into the second cavity of the terminal that receives the conductor”** is construed as “a fastening stem that extends from the mounting cuff and into the second cavity of the terminal

that receives the conductor and attaches or joins the mounting cuff to the terminal or to the conductor.”

IT IS SO ORDERED.

Date: August 10, 2023

/s/ Indira Talwani
United States District Judge